

**Statement of
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**Before the
U.S. House of Representatives
Committee on Natural Resources
Subcommittee on Energy and Mineral Resources**

**Oversight Hearing:
*“America’s Helium Supply: Options for Producing More Helium from Federal Lands”***

July 11, 2013

Mr. Chairman and members of the Subcommittee, thank you for the opportunity to testify on domestic helium production. As indicated by a National Academy of Sciences (NAS) report published in early 2010, the market for helium has proven more volatile than expected when the Helium Privatization Act of 1996 became law. The report also concluded that the requirement that the Bureau of Land Management (BLM) offer for sale nearly all of the Federal Helium Reserve by 2015 could pose a threat to the availability of this resource for future U.S. research, scientific, technical, biomedical, and national security users of helium. The Department of the Interior appreciates the continued interest of the Congress in exploring the issue of helium production beyond the scope of the Reserve and supports efforts to increase the production of helium from new sources to meet future U.S. demand.

Background

Helium is a critical, non-renewable natural resource that plays an important role in research, medical imaging, space exploration, military reconnaissance, fiber optics manufacturing, welding and commercial diving. According to the NAS, helium’s best known property, being lighter than air, means “that every unit of helium that is produced and used today will eventually escape the Earth’s atmosphere and become one less unit available for use tomorrow.”

The most common and economical way of capturing helium is by stripping it from natural gas during gas production. Geologic conditions in Texas, Oklahoma, and Kansas make the natural gas in these areas some of the most helium-rich in the United States, ranging from 0.5 to 1.5 percent of the gas extracted during production. The BLM plays a key role in the careful management and stewardship of the only significant long-term storage facility for crude helium in the world, known as the Federal Helium Reserve (Reserve), which supplies approximately 42 percent of domestic demand and approximately 35 percent of global demand for crude helium.

The Federal Helium Program

Because of helium’s potential to lift military reconnaissance devices high above battlefields, the Federal government’s interest in the resource dates back to World War I. Recognizing this key

military use for helium, the Mineral Leasing Act of 1920 reserved to the Federal government all helium produced on Federal lands—a reservation that remains in effect today. After World War I, recognition of the potential for helium recovery in the Texas Panhandle, Western Oklahoma, and Kansas area (collectively, the “Hugoton” field) led to the development of the Federal helium program focused in that area. In 1929, the Bureau of Mines built the Amarillo Helium Plant and Cliffside Gasfield Facility near Amarillo, Texas, to produce helium-bearing natural gas from a naturally occurring geologic field known as the Bush Dome Reservoir.

After World War II, Federal use of helium shifted toward applications related to space exploration, and in 1960 Congress passed the Helium Act Amendments of 1960. This Act changed the program’s mandate from exclusive government production of helium to conservation of the resource. This was to be accomplished by executing contracts with private natural gas producers to purchase extracted crude helium for the Federal government to store in the Bush Dome Reservoir. The Act granted the Bureau of Mines, the BLM’s predecessor agency in managing this program, the authority to borrow funds from the U.S. Treasury to purchase the helium, with the expectation that the proceeds from future sales of helium would allow the Bureau of Mines to repay the debt. This borrowing authority, established by Congress in lieu of a direct appropriation, required the Bureau of Mines to repay the loan by 1985. Subsequent legislation extended the deadline to 1995.

Federal demands for helium rarely, if ever, met the expectations underlying the terms of the U.S. Treasury’s loan to the Bureau of Mines. When the 1995 deadline to pay off the debt arrived, the \$252 million the Bureau had spent on privately-produced helium had increased to \$1.3 billion (principal and interest), and the Bureau of Mines appeared to have little prospect of repaying the debt. In his 1995 State of the Union address, President Bill Clinton stated that it was his Administration’s goal to privatize the Federal helium program.

Congress subsequently passed the Helium Privatization Act of 1996 (HPA), which required the BLM (which assumed jurisdiction over the program after the termination of the Bureau of Mines) to make available for sale the vast majority of the stockpile of crude helium. The mandate directed the BLM to begin selling helium no later than 2005, in order to avoid market disruption. The BLM was to make a consistent amount of helium available every year at a price based on the amount of remaining helium debt and the amount of helium in storage. When Congress passed the HPA, there was approximately 30.5 billion standard cubic feet (scf) of helium in storage in the Bush Dome Reservoir. The HPA mandated the BLM to make available for sale all of the helium in excess of a 600 million scf permanent reserve.

Additionally, the HPA required the BLM to cease all helium production, refining, and marketing activities to effectively privatize the refined helium market in the United States. Finally, the Act provided for the NAS to review the impacts of the 1996 Act. The NAS published its first study in 2000, and released a follow-up report in 2010.

The BLM’s Helium Operations

The BLM currently operates the Federal helium program with the primary goals of supplying helium to meet the Nation’s needs of Federal helium users and paying off the “helium debt.” To this end, the BLM has paid approximately \$1.33 billion to the U.S. Treasury since 1995. This

constitutes substantial progress toward eliminating the helium debt, which the HPA froze at approximately \$1.37 billion. During FY 2012, the helium debt was reduced by an additional \$180 million from Reserve sales, resulting in an outstanding balance of approximately \$44 million at the end of the fiscal year.

According to the HPA, once the helium debt is retired, the Helium Production Fund (used to fund the BLM's helium program operational expenses) would be dissolved and all future receipts would be deposited directly into the general fund of the U.S. Treasury. The BLM has generated enough revenue during this fiscal year through currently authorized helium sales to pay off the debt at the beginning of FY 2014.

The BLM's current helium program, with a workforce of 51 full-time equivalents (FTE), operates not only the original storage and pipeline system, but also a crude helium enrichment unit, owned by private industry refiners, that facilitates transmission of helium to private helium operations on the BLM's helium pipeline. Among its responsibilities, the BLM administers the sale of crude helium to private refiners. These sales make the most significant contributions toward paying off the helium debt. In addition, the agency conducts domestic helium resource evaluation and reserve tracking to determine the extent of available helium resources. The BLM is also responsible for administering helium extracted from Federal resources, including management of fees and royalty contracts. These operations are not limited to the Hugoton gas field, but also occur in fields in Colorado, Wyoming, Utah, and any other state where producers extract helium from the Federal mineral estate.

Another major part of the BLM's helium program is the "In-Kind" program, which supplies helium to Federal agencies (e.g., the Department of Energy and the National Aeronautics and Space Administration) for operations and/or research. Before the Helium Privatization Act, Congress required Federal agencies to purchase their refined helium supplies from the Bureau of Mines. Under the current In-Kind program, Federal agencies purchase all of their refined helium from private suppliers who, in turn, are required to purchase a commensurate amount of crude helium from the Reserve. In FY 2012, Federal agencies purchased \$10.3 million of helium through the In-Kind program.

The National Academy of Sciences Reports

In 2000, the NAS published its first analysis of the impacts of the HPA. Its general finding was that the Act would not have an impact on helium users. Additionally, the NAS report concluded that because the price-setting mechanism was based on the amount of the helium debt, and not the market for helium, the government's significantly higher price would mean the helium refining industry would buy crude helium from the BLM only as a last resort for fulfilling private contracts. However, private helium refiners would still be required to purchase crude helium from the BLM under the In-Kind program.

Over the course of the last decade, however, it has become apparent that assumptions underlying the 2000 NAS Report did not hold. First, the NAS's assumption that "[t]he price of helium [would] probably remain stable through at least 2010" has proven faulty. The market for helium has seen significant fluctuations on both the demand side—which dropped significantly in 2008 after peaking the prior year—and on the supply side, which experienced a significant decline in

private supplies between 2006 and 2008. In the face of this volatility, prices for helium rose steadily over the course of the decade. By 2008, the market price for helium began to hover near the BLM's price, leading to greater withdrawals from the Reserve than the 2000 NAS Report anticipated.

Another market impact that the 2000 NAS Report did not address was international supply and demand for helium. According to the U.S. Department of Commerce, domestic consumption of helium decreased 2.7 percent per year from 2000-2007, while exports to the Pacific Rim grew 6.8 percent annually, exceeding the 5.1 percent growth rate in Europe. The international market also experienced supply issues because of refining capacity problems at plants in Qatar and Algeria, which would normally help supply both Europe and Asia.

In early 2010, the NAS released a follow-up report on the BLM's management of the Reserve. The report, entitled "Selling the Nation's Helium Reserve," focused on "whether the interests of the United States have been well served by the [HPA] and, in particular, whether selling off the Reserve has had any adverse effect on U.S. scientific, technical, biomedical, and national security users of helium."

The 2010 NAS report, which identified some shortcomings of the 2000 report, takes a markedly different tone than the 2000 report. This change in approach reflects the volatility of the helium market over the last decade. The NAS report analyzes the relationship between supply and demand for helium on a domestic and international basis, as well as the BLM's management of the Reserve under the HPA. The report concludes that the HPA mandated sell-off is negatively impacting the needs of both current and future users of helium in the United States. This conclusion is the driving force behind a series of recommendations in the report directed at the BLM and the Congress.

Helium Production on Federal Lands

Since production of crude helium from the Reserve is currently in decline, other domestic supplies of helium will be needed to meet future U.S. demand without having to import helium. The BLM has processes in place to analyze and approve applications for helium production on Federal lands—both in combination with natural gas production processes and for drilling proposals focused exclusively on helium production. As stated above, helium commonly exists as a minor component of most natural gas plays. When natural gas is produced, it is typically transported by pipeline to a processing plant where it is separated into marketable components, which could include helium if it is a viable option. Because the helium on Federal lands is reserved to the United States, natural gas lessees can enter into additional contracts with the BLM to provide for the processing and sale of the helium. This type of arrangement occurs near Kemmerer, Wyoming, where helium produced from Federal lands partially supplies an ExxonMobil helium refinery.

Similar contracts can also be used to enable the recovery of helium as a primary gas in combination with Applications for Permit to Drill (APDs). This method is feasible where the gas composition in a reservoir consists of relatively higher helium concentration in a low Btu gas stream. For example, the BLM recently approved an APD for a 1,100-foot exploratory well in the Harley Dome gas field in eastern Utah and an associated right-of-way to transport the

produced gas via a surface pipeline to a new gas processing plant. If sufficient quality and quantity of helium is confirmed, the proponent will construct a four-inch, 7,183-foot pipeline to a small plant where the helium will be removed from the gas stream and compressed for truck transport. The well will be located five miles west of the Utah-Colorado border on Federal lands in northern Grand County and the helium extraction plant will be located 1.4 miles from the well on private property.

During FY 2012, the Department of the Interior collected over \$10.4 million in revenues from the sale of helium produced from Federal lands. While the long-term potential for such production remains unclear, the BLM has noticed a recent increase in expressions of interest for helium production on Federal lands. The BLM looks forward to working with interested parties on helium production contracts that will help meet the helium needs of the country.

Conclusion

Thank you for the opportunity to testify today. The BLM welcomes further discussion about the Federal helium program. Many Federal agencies depend on helium for scientific research, aerospace projects, and defense purposes. Since its formal discovery almost 120 years ago, helium has proven to be an increasingly important natural resource. The expansion of helium-related technology and declining domestic reserves means the importance of helium as a strategic resource is likely to increase. The BLM continues to serve the country by effectively managing the Reserve, and working with natural gas producers to efficiently extract helium from natural gas. I would be happy to answer any questions the Subcommittee may have.